ABSTRACT

A frequency-hopping spread spectrum radio communications system that includes a compact

radio transceiver having a sensitivity of between -110 and –107 dBm. The transceiver

broadcasts digital signals by encoding them using 180-degree phase-shifted differential

5 encoding and by attaching a header identifying the frequency channel of the signal. A

network ID is also included in the header to identify the network that the radio belongs to.

The network ID allows the receiver to detect broadcasted signals within its own network,

and the channel identifier enables the receiver to know which frequency to switch to in order

to track the hopped signal. The receiver knows to hop to the next channel upon detecting

10 noise on the line.

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